

HEALTH IMPROVEMENTS IN COSTA RICA:
THE SOCIOECONOMIC BACKGROUND

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Introduction

Costa Rica has enjoyed remarkable and sustained health improvements. The accomplishments have been reflected in all major health indicators, and progress has been significant, both in comparison with other less developed countries (LDCs) and over time. The gains have gone beyond what could have been predicted from per capita income levels. In several aspects, Costa Rica's health standards have rapidly approached those of the most advanced nations. This paper attempts to describe the socio-economic background that has made this possible.

Costa Rica's successful progress in health care has been reflected in substantial reductions in mortality rates (1,2). During the first half of the century, the country's gross mortality rate declined from 30 (1910-1920) to 12 per thousand (1950-55). This mortality rate further decreased to 4 per thousand by 1980, reflecting both the age structure of the population and major health gains. As a result, life expectancy increased from 41 (1929) to 56 (1950) and to 74 years (1982). Rapid gains in life expectancy took place before 1950 (an average annual gain of 0.71 years during 1929-50), and marginal progress continued to be strong even after mortality had been substantially reduced. During 1960-78, Costa Rica gained 0.44 years of life expectancy per annum. Most of the beneficiaries of these gains have been the young (and the newborn), who constitute a

large proportion of the population. As expected, female mortality rates have been lower. The reduction in mortality rates has not been uniform: as of 1973, there was a 7-8 year difference in life expectancy between the province with the lowest and the three provinces with the highest life expectancy.

Infant mortality has experienced remarkable reductions (3). This rate declined from 90 (1950) to 19 per thousand (1980), with the greatest gains taking place during the 1970s (since this rate was still 63 per thousand in 1970). This has been particularly significant, in view of the low incidence of abortion in Costa Rica (4). Obviously, the risk of death has been higher for children living in the country's periphery (outside of the Central Valley). As of 1968-69, the probability of death before the first two years of life was 93 per thousand for rural children and 62 per thousand in the urban areas (5,6). The recent expansion of the rural infrastructure and the provision of public services into the country's remote areas has helped to close this gap. Most of the decline in infant mortality rates has been associated with the control of diarrheal diseases and respiratory infections, reflecting the expansion of sanitation, immunization, and other mother-and-child care services. Infant malnutrition has also declined substantially from 13.5 percent of children up to 6 years old in 1966 to 4.1 percent in 1982, while acute malnutrition has ceased to be a serious public-health problem (7,8). By 1980, the per capita intake of calories was 116 percent of daily requirements (9).

The explanation of this favorable evolution is complex and no one single factor can account for it. Rather, the gains have resulted from a combination of several, different but mutually dependent circumstances, that have reinforced one another. Some of the determinants of success have been associated with the general socioeconomic environment and have their roots in the long-term history of the country; others have responded to specific events and actions. The country's social organization and political system, its size and the geographical patterns of settlement, and rapid economic growth deserve special attention. Income growth has made progress in education, communications, transportation, and the provision of electricity, water, and other basic services possible. Specific determinants, in turn, have included the large allocation of public expenditures to health-related activities, particularly to primary health care, human capital formation (both in general and through training of medical personnel) and physical investment (installations and equipment), the choice of medical technologies, and the design and implementation of particular programs. The accomplishments have been made possible only through the combination of the country's overall social and economic development with appropriate resource allocations, technological choices, and policy design. The gains have reflected a sustained effort over time, where improvements in one dimension have reinforced progress in others. Frequently the effects of health policies and interventions have long gestation periods and many are reversible. Costa Rica's experience suggests the need for a simultaneous push on

several fronts, sustained but flexible, innovative and adapted to changing circumstances.

Socio-Political Framework

Costa Rica is widely considered to be one of the most democratic countries in the world (10). The country has enjoyed an exceptionally well-ordered political system, characterized by honest, scrupulously supervised elections, prohibition of presidential re-election, balancing powers, and responsiveness to popular needs. Except once, since 1948 the opposition has always won elections. The elected legislature has been strong, civil liberties fully observed, and the constitution designed to check political power. Most importantly, there has been no military organization even potentially capable of exerting influence (the army was banned by the constitution in 1948, while the police force has been weak and respectful of human rights). There has been a long tradition of general attachment to legal ways and of nonviolence. The roots of this democratic system go back to colonial times, when the isolated farmers of the Central Valley worked their own land for lack of Indians to enserf or of a precious-metal surplus to export. Over time, democracy became and has remained a matter of national pride, and with the country's educational system, Costa Rica's most important claim to distinction (11)

Although landholding and wealth have been concentrated (less so than in most LDCs), there has been a comparatively large

middle class, and the proportion of the population in absolute poverty has been relatively small (12). While in 1969, 10.8 percent of the Latin American population was below a poverty line of US\$ 50 per year, Costa Rica showed the lowest proportion, of 2.3 percent. For a poverty line of US\$ 75, the proportion increased to 17.4 percent for the 17 countries in Latin America, but only to 8.5 percent in Costa Rica (compared, for example, to 58.5 percent in Ecuador). Culturally and ethnically, the population has been particularly homogeneous, and women have enjoyed more equality than in most Latin American countries. There have been no serious ideological, racial, or regional divisions, no influence of a military establishment, and not even exceptional riches.

Democratic politics have determined economic and social policies. A major element of the country's development strategy has been the emphasis on equity and on generalized improvements in the quality of life. This emphasis has been reflected in major public investments in education, health, nutrition, social security, assistance to poor families, and other public-sector services. The country has enacted an extensive social legislation, including universal provision of services in health, education, and family-income assistance. The concern for equity has reflected the nature of the political system, that has encouraged participation and the open debate of issues. There has always been an active opposition to question public policies, with ample access to a free press, and successive governments of different persuasion have preserved and enhanced social equity.

Health improvements have reflected the growth-cum-equity policies generated by political stability, homogeneity, and democratic traditions. Ample opportunities for upward mobility, modernization, and a social environment in which freedom is valued and practiced have not only guaranteed access to services, but have also fueled the demand for those services. Costa Ricans have become used to improvements in education, health and nutrition and to defend access to them as acquired rights. Economic growth has made their supply feasible. Growth has generated the resources required for human capital formation and the provision of public-sector goods; while increased household incomes have made it possible to cover the opportunity costs (of time, transportation, food, and other expenses) associated with their demand. This has been particularly true for education. Higher incomes have also allowed households to pay for complementary expenses (medicines, food, etc.), better housing, and healthier environments.

Public investment has resulted in the development of a physical infrastructure for the benefit of most Costa Ricans. With large amounts of foreign assistance, Costa Rica has built an impressive network of highways and feeder roads, electric power, and telecommunications system (13). The life of peasants has been transformed by roads and buses, water supplies and electricity reaching into all corners, telephones in all rural villages, agricultural extension, health and sanitary services, reliable mail delivery, and newspapers, radio, and even television, which have found their way into most peasant homes (14). The proportion

of the population with potable water at home increased from 53 percent in 1950 to 84 percent in 1980, while the proportion with sewage disposal augmented from 48 to 93 percent during the same period. The proportion of households with electricity grew from 40 to 79 percent, while the proportion of households with radio reached 95 percent and the proportion of those with television reached 79 percent by 1980. During those three decades, per 1,000 persons, the number of telephones grew from 11 to 70, the number of automobiles from 9 to 63, and the number of newspapers from 85 to 118.

Although the major beneficiaries of economic growth and of the public-sector services provided have been the swelling middle-income groups, the poor increasingly shared in the fruits of development, at least until the financial crisis of the early 1980s. Certainly, the equity-oriented system has been expensive, and a large bureaucracy has evolved to administer it (13). While the accompanying financial burden may have contributed to the fiscal crisis, the constraints imposed by this crisis have resulted in an increasing proportion of shrinking available resources being devoted to paying employees, at the expense of the benefits reaching target populations.

Health Policies

Costa Rica has devoted a substantial proportion of its resources to health services as well as to other activities (education, housing, transportation, etc.) that directly

influence health levels (15). Available information is not very reliable and comparisons across sources are difficult. The World Bank reports an increase in the proportion of health expenditures from 4 (1972) to 30 percent (1981) of central government expenditures (9). Combining health and housing, social security, and welfare expenditures, this proportion rose from 30 to 40 percent, while the proportion devoted to education dropped from 28 to 24 percent. Andic, on the basis of IMF statistics, computed a proportion for health that increased to 4.6 percent in 1976, and then declined (16). Social security and welfare expenditures represented 24.7 percent and education 27.2 percent in 1976. On the other hand, Lizano and Cespedes estimated that health expenditures rose to amount 11 percent of the GDP in 1980. The trend towards increasing ratios of health expenditures to the GDP and augmenting per capita expenditures has been reversed with the recent financial crisis (17).

Special attention has been devoted to educating doctors and medical technicians. The effort has been carried out mostly by the schools of Medicine and of Nursing at the University of Costa Rica and, more recently, at the private university (UACA). The autonomous institution in charge of social security (CCSS) has sponsored numerous training programs as well as scholarships for study abroad. The training of intermediate health technicians has also played a crucial role. As a result, per 10,000 persons, the number of physicians increased from 3.1 in 1950 to 7.8 in 1980, and the population per nurse declined from 720 in 1960 to 450 in 1980 (9). The development of human resources has been accompanied by the expansion of physical facilities and other material

resources, particularly during the 1970s (15). The number of health-related facilities (hospitals, peripheral clinics, and health centers) increased from 400 in 1973 to 944 in 1977 (18).

These human and material resources have contributed to observed gains through ambitious and well-conceived policies. In the absence of appropriate policies these resources would have been wasted (17). These policies have included programs in preventive medicine, child-and-mother care, primary health care, healthier environment, and nutrition, in addition to the social-security efforts.

Costa Rica enjoys one of the most comprehensive social security systems among LDCs (19). The CCSS was established in 1942 and began to offer medical and maternity insurance to selected classes of workers, as well as a pension program, both financed by contributions (as set percentages of wages) by workers, employers, and the government. The health-care program already reached 20 percent of the economically active population by 1948, a proportion that was almost doubled by 1970 (38 percent). At that time, these services reached 46 percent of the total population. The CCSS coverage accelerate during the 1970s and by 1980 it reached 69 percent of the economically active population and their families (78 percent of the total population). All hospitals and health-care establishments were transferred to the CCSS in 1973, which became the country's most powerful institution (17). Access to health services was increased by breaking geographical barriers, through the expansion of the

physical infrastructure, cultural barriers, through education, and economic barriers, through universal coverage of the CCSS services.

Education

The educational effort constitutes, in addition to the political system, Costa Rica's differential feature in Latin America. Education was given a high priority from the earlier days of the republic (20). By 1869, the country's liberal ideology was incorporated in a constitution that declared primary education free and compulsory and a main responsibility of the state. Free education was expanded to the secondary level in 1949. The illiteracy rate was reduced from 69 percent of the population 10 years old and older in 1892, to 30 percent in 1912, already a low proportion even in comparison with many of today's LDCs.

Having declined to 21 percent by 1950, the illiteracy rate further decreased to 10 percent by 1973. There have practically been no differences with respect to literacy between the sexes (by 1973 the illiteracy rate was 10.2 percent for men and 10.3 percent for women). On the other hand, by 1973 the illiteracy rate was 4 percent in the urban centers and 15 percent in the rural areas, but the rapid continued decline in illiteracy has further closed the gap. Moreover, the proportion of the population 10 years old or older with less than three completed years of schooling declined from 45 percent in 1950 to 21 percent in 1973.

According to the World Bank, the number enrolled in primary school, as a percentage of their age group, increased from 96 to 108 percent during 1960-80 (9). There have been no significant sex differences in primary education enrollment. The number enrolled in secondary school as a proportion of their age group rose from 21 to 48 percent during the same period, while the number enrolled in higher education as a percentage of the population 20 to 24 years old went up from 5 to 26 percent. The proportion of women 20 to 34 years old who had completed primary education increased from 22 to 66 percent during 1950-80. Census data show remarkable progress between 1963 and 1973 in those provinces with the lowest levels of education, significantly closing geographical gaps (20).

As indicated, substantial resources have been allocated to education. These allocations increased from about 25 percent of government expenditures in the late 1950s to 35 percent in the late 1960s and declined to 25 percent in the late 1970s, as other social expenditures grew faster. By the late 1960s, educational expenses amounted to 17 percent of the GDP. One cannot overemphasize the major impact of these expenditures and of the long-term educational achievements on health improvements. Education makes the population more receptive to the better-health message. The explosion of communications, facilitated by improved education, multiplies the frequency of the message. In a free and open sociopolitical environment, the message is translated into a demand for health services. Education and concern for human rights result in a more trusting and respectful doctor-patient

relationship. Increased productivity and incomes, as a result of better education, facilitate payment for the better services demanded. They also make possible more rapid human capital formation in the health sector. Increased education, moreover, leads to a decline in fertility and to better maternal care. Progress in these two fronts is closely linked.

Development Strategy, Growth, and Structural Transformation

Two main characteristics of the Costa Rican economy are its small size, with the limitations imposed by a poor domestic market, and its high degree of openness to foreign trade. With a population of 2.5 million and a per capita gross domestic product (GDP) of about US\$ 1,500, Costa Rica is a very small economy. Given a specialized resource base and a small domestic market, trade with other countries has acted as the economy's engine of growth. Much of the impulse for growth during this century has been provided by exports of agricultural commodities. Exports of coffee, bananas, cacao, sugar, and beef have raised the country's capacity to import and levels of output, and have yield many of the dynamic benefits from specialization (21).

Costa Rica is a very open economy. During the past three decades, exports have represented between one fifth and one third of the GDP and this proportion has increased over time. Imports have represented between one-quarter and one-half of the GDP, with a similar increasing trend. Costa Rica exports mainly primary products. About two-thirds of the agricultural output

have been exported in recent times, which has generate at least two thirds of the country's foreign exchange earnings. Some diversification has taken place, however. The relative importance of coffee declined from 49 percent (1957) to 24 percent of total exports (1980), whereas the share of bananas dropped from 39 percent (1957) to 20 percent of the total (1980). Trade has also played an important role in the development of manufacturing. When Costa Rica joined the Central American Common Market (CACM) in 1963, manufactured goods represented only 4 percent of total exports, but this proportion grew to 29 percent by 1979. About four-fifths of these exports have gone to the CACM, rather than into competitive world markets (22,23)

The Costa Rican economy grew at a very satisfactory pace since the 1960s. In constant 1966 prices, between 1960 and 1980 the GDP grew at an average rate of 5.8 percent per annum. There has been a tendency, however, for this rate of growth to decline, from an average annual rate of 7.0 percent for 1965-70, to 5.2 percent for 1975-80, and to negative rates in the early 1980s. This tendency towards slower growth has been shared by all major sectors of economic activity. Thus, the average rate of growth of the agricultural GDP dropped from 8.1 percent per annum for 1965-70, to 1.8 percent for 1975-80, whereas the average rate of growth of GDP in manufacturing declined from 9.3 percent per annum for 1965-70, to 6.0 percent for 1975-80. The more rapid deceleration of the agricultural output reflected, in part, the penalization of exports and of agriculture that resulted from the

choice of a strategy of industrialization and import substitution, reinforced when Costa Rica joined the CACM.

As a consequence of the growth of productivity in the agricultural sector and of the protectionist strategy of industrialization, the Costa Rican economy has experienced important structural changes (22). The relative importance of the agricultural sector has declined substantially, while the share of other sectors, with the exception of commerce, has increased. The most dynamic sectors have been manufacturing, personal services, and the central government. The most significant structural transformation had already taken place before 1960. Between 1950 and 1960, the share of agriculture declined 14.9 percentage points, from an original level of 40.9 percent of the GDP. During the 1960s this share declined only 3.5 points, and an additional loss of 4.7 points took place during the 1970s, bringing this share down to 17.8 percent by 1980. The contribution of agriculture to GDP increased both during the "coffee boom" and the recent crisis.

The sharp reduction in the relative importance of agriculture during the 1950s was not due to the expansion of manufacturing, whose contribution to the GDP gained only 0.8 points, but to the growth of the central government, whose share increased by 3.6 points, and other public-sector related activities, such as water and electricity, transportation, and banking and finance. The most rapid increase in the share of manufacturing took place during the 1960s, after Costa Rica joined the CACM, with a gain of 4.4 points. Once the "easy" stage of import substitution was

completed, during the 1970s the contribution of manufacturing to the GDP stagnated, to reach 18.6 percent by 1980. Once more, during the 1970s most of the decline in the relative importance of agriculture was not due to the expansion of manufacturing but of the central government, whose share gained 4.6 points.

A substantial portion of the shifts in the relative contributions to the GDP resulted merely from price changes (the evolution of the domestic terms-of-trade among sectors). In real terms, during the 1960s the share of agriculture was fairly constant, but the terms-of-trade of the sector deteriorated, mostly as a consequence of the protectionist strategy of industrialization (22). While agricultural prices were 11.3 percent lower in 1970 than in 1957, the prices of manufactures were 37.7 percent higher. This implied a deterioration of 35.5 percent of the terms-of-trade of agriculture. During the 1970s, however, in real terms the contribution of agriculture to the GDP declined 6.1 points, in response to the penalization introduced by the strategy, but this was reversed by the "coffee boom". In real terms, the share of the central government remained fairly constant over the three decades, but between 1957 and 1980 the terms-of-trade of this sector increased 147 percent. The deterioration of the agricultural terms-of-trade therefore, has resulted not so much from increased industrial prices, but from increasing public sector wages.

The Recent Crisis

In the early 1980s, Costa Rica was experiencing an acute economic crisis, characterized by declining output, growing unemployment, rampant inflation and rapid devaluation, large public-sector deficits and a huge public external debt (23). The difficulties were in sharp contrast with the remarkable progress of the previous decades. The crisis was the result of both long-term structural trends and particularly unfavorable short-term circumstances (21). The structural determinants of the crisis reflected a contradiction between the country's basic economic characteristics and the features of the protectionist strategy of import substitution, as well as the growing role of the public sector in productive activities. These problems were accentuated by external shocks and by domestic policies adopted in response to the shocks.

The protectionist strategy promoted the "inward-looking" development of manufacturing, conditioning the growth of this sector to the strength of the local demand. High growth rates during the 1960s and early 1970 resulted from the dramatic increase in Central American trade after creation of the customs union. Eventually, the "easy" stage of import substitution was exhausted, leading to increasing stagnation of output and trade (23). From a high of 8.9 percent per annum, the growth rate of the GDP dropped to -9.1 percent in 1982. In the case of agriculture, this rate declined from 6.6 percent per annum (1978) to -4.9 percent (1982), and in the case of manufacturing, from 12.7 percent (1977) to -14.9 percent (1982).

The protectionist strategy distorted relative commodity prices, turning the domestic terms-of-trade against agriculture, and relative factor prices, favoring capital-intensive sectors and technologies and reducing the labor-absorptive capacity of the modern private sector. This forced the public sector to become an active employer, contributing to growing fiscal deficits. The inefficiencies brought about by these policies have been apparent in the structure of production, exacting high costs to domestic consumers, and limiting competitiveness in international markets.

High levels of effective tariff protection were granted for the production of final consumer goods, while protection for raw materials, intermediate inputs, and capital goods was low and even negative (24.25). This resulted in a very import-intensive manufacturing sector. In order to produce US\$ 100 worth of manufactures, Costa Rica needs at least US\$ 60 worth of imported inputs. As a consequence, the Costa Rican economy has become less able to adjust to external shocks. By now, less than 15 percent of total imports represent final consumer goods. Thus, balance-of-payments adjustment implies the contraction of imports of raw materials, intermediate inputs, and capital goods, needed to keep manufacturing output growing. The consequences are stagnation and employment. The alternative is increased foreign debt (21).

The short term determinants of the crisis have included the two international oil shocks, the sharp increase and subsequent decline in the international prices of agricultural exports (the "coffee boom") and the world recession, changes in access to

international financial markets, and war, insurrection, and political instability in Central America which, in part, explain the deterioration of the CACM. The resulting sharp fluctuation in the country's international terms-of-trade substantially increased instability and faced Costa Rica with a major problem of adjustment.

The international terms-of-trade deteriorated rapidly during the first oil shock (1973-74), to about 76 percent of their 1966 level, but rapidly improved afterwards, to 115 percent, as a consequence of the "coffee boom". After 1978, these terms-of-trade declined again, to 69 percent in 1983. The extraordinary improvement in the terms-of-trade and the rapid expansion of exports during the "boom" significantly increased real incomes and the levels of consumption, public expenditure, and imports. Aggregate spending was further increased by borrowing abroad, even beyond the levels made possible by the exceptional export earnings. When the "boom" was over, as the country's terms-of-trade deteriorated again, demand for its traditional exports declined, and domestic and foreign investment contracted, real incomes fell, but the authorities chose to postpone the adjustment by further borrowing abroad. The country's external debt reached \$1,600 per capita, while the increasing over-valuation of the domestic currency reduced the profitability of exports.

In order to finance public-sector deficits, when foreign capital inflows dried out, the authorities rapidly expanded domestic credit, creating strong inflationary pressures which, first led to the loss of the country's international monetary reserves, and then to inflation and devaluation. The rate of exchange went from 8.6 colones per US dollar in early 1980, to 65

colones per US dollar in mid-1982. By 1981, the rate of change of the consumer price index was 65 percent per annum and the rate of change of the wholesale price index was 117 percent.

The speed with which the Costa Rican economy deteriorated was very dramatic. In a few years, an economy that was growing vigorously stagnated, the rate of unemployment doubled, secular price stability was followed by three-digit inflation, and the country experienced an unprecedented devaluation of its currency. Costa Rica also finds it very difficult to service the accumulated public external debt (26). In 1983-84, nevertheless, relative foreign-exchange rate and domestic price stability have been regained and growth has resumed, but the country is still far from having overcome the crisis or its consequences.

The Labor Force

Between 1960 and 1980, the rate of growth of the Costa Rican population dramatically declined, from a maximum of almost 3.9 percent per annum, to about 2.4 percent. This decline was mostly due to reductions in fertility. Whereas around 1960, about 60 percent of the population was 12 years old or older, this proportion had increased to 70 percent by 1980. During this two decades, the median age increased from 16 to 20 years. As a consequence, the proportion of those in working ages (15 to 64 years) augmented from 50 to 59 percent of the total population. During 1978-83, the rate of growth of this age group averaged 3.8 percent per annum (27,28).

The labor force grew at an annual rate of 2.8 percent during 1950-63 and of 3.7 percent during 1963-73, and continued to grow even more rapidly through 1978. In part, this has reflected increasing rates of participation by women (from 16 percent in 1963 to 26 percent in 1979). Between 1963 and 1980, the average rate of growth of the female labor force was 6.8 percent per annum, more than twice the rate for the male labor force, of 3.2 percent per annum. There has also been less active participation by the younger and older persons, as a result of expanding educational opportunities, family incomes, pension systems and welfare assistance. In turn, the dependency rate, that had increased from 2.0 (1950) to 2.4 (1963), declined to 1.9 (1980).

During the 1970s the urban population grew more rapidly than the total population. In the most recent years, the rate of growth of the urban population was 4.2 percent per annum. As the result, the proportion of the urban population in the total, that had increased from 33 percent in 1950 to 41 percent in 1973, reached 46 percent by 1980. In earlier periods, when the agricultural sector was larger, most of the domestic migration took place between different rural areas, usually in search for new uncultivated land or to earn the higher wages of the banana plantations. Recently, however, the reduced availability of uncultivated land and increasing urban-rural wage differentials have resulted in greater rural-urban migration, particularly to San Jose's Metropolitan Area. While during 1950-63, agriculture generated 35 percent of the new jobs in the economy, during 1963-73 it offered only 11 percent of the new jobs. More recen-

tly, employment in agriculture has actually declined. Thus, the proportion of the labor force residing in urban areas increased from 43 percent in 1973 to 48 percent in 1980 (28).

While 55 percent of the employed labor force worked in agriculture in 1950, this proportion declined to 27 percent by 1980. Ten years after Costa Rica joined the CACM, the relative share of manufacturing in employment had not changed much (from 12 percent in 1963 to 13 percent in 1973). By 1980 this share reached only 16 percent, indicating the relative capital intensity of production, induced by the protectionist strategy. Besides agriculture, the other large employer is the personal services sector, whose share increased from 18 percent in 1950 to 24 percent in 1980, reflecting, in part, the expansion of public-sector employment. The most rapidly growing share was that of commerce, which augmented from 8 percent in 1950 to 18 percent in 1980.

Employment in the public sector increased more than four times more rapidly than employment in the private sector during 1950-63, and still during 1973-80 the former rate was more than twice the latter. This meant that the share of the public sector in total employment increased from 6 percent in 1950 to 20 percent in 1980. This has reflected implicit policies to keep unemployment low and has contributed to the fiscal disequilibrium that has been at the roots of the recent crisis. The constraints on the capacity of sector to absorb employment during the crisis explain the increasing rates of unemployment observed. Open unemployment had increased from 4.1 percent of the labor force in 1950 to 7.3 percent in 1973, but then declined to 4.5 percent by

1978. With the crisis, this rate reached 9.5 percent by 1982. When visible underemployment is added, this rate increased from 7.5 percent in 1976 to 14.6 percent in 1981.

Poverty and Income Distribution

In constant 1966 prices, during 1957-80 per capita GDP grew at an average rate of 2.3 percent per annum. Little was gained during 1957-65, when the average rate was 0.3 percent per annum, mostly due to high population growth. A much higher rate of 3.8 percent, observed during 1965-70 reflected the initial impact of increased trade within the CACM. This rate was not maintained during 1970-75, when the averaged 1.4 percent per annum, as the strategy became exhausted. The "coffee boom" explains an annual rate of 4.7 percent during 1975-80, followed by sharp declines during the crisis. By 1980, real per capita GDP was 67 percent higher than in 1957. Most of this growth, however, was recent. By 1970, per capita GDP was only 24 percent higher than in 1957, while the 1980 level was 35 percent higher than the 1970 level. During the crisis, per capita GDP declined by 19 percent. Although uneven, this growth resulted in a significant improvement of the average standard of living of Costa Ricans and made possible substantial attempts to redistribute income and to reach the poor with many basic services.

Available information suggests that the distribution of household income experienced a significant change during the 1960s (28,29). Families with intermediate incomes increased their relative participation in total income at the expense, mostly, of

the households with the highest incomes and, to a much lesser extent, of those with the lowest incomes. As a result, the Gini coefficient declined from 0.52 in 1961 to 0.44 in 1971. The share in income of the 10 percent richest dropped from 44 percent in 1961 to 37 percent in 1971, while the share of the 10 percent poorest declined from 2.8 percent to 2.0 percent. Available evidence suggests, on the other hand, that concentration increased somewhat during the 1970s, improving the relative position of the richest 60 percent, with respect to the poorest 40 percent (30).

Income inequality in Costa Rica is considered comparatively moderate. The Gini coefficient for the distribution of household income in 1971 (0.44) was at the midpoint of LDCs, but relatively low by Latin American standards (12). In addition, the proportion of families below an absolute poverty line of 250 constant colones per month fell from about 20 to 10 percent during the 1960s. If the poverty line is instead drawn at 500 colones, the decline is even more marked, from 65 to 30 percent. Thus, absolute poverty was being alleviated rapidly (31).

Families living in the rural areas show a more egalitarian distribution of income (28). By 1971, the Gini coefficient for the distribution of household income was 0.43 for the urban and 0.37 for the rural areas. The national average household income was 48 percent higher than the rural average. Families with an average monthly income of 200 constant colones included 37 percent of the urban and 77 percent of the rural households. That is, in Costa Rica the poor are more rural than urban. Non-farming families represented two-thirds of the rural poor (32).

The share of total taxes in national income increased from 15 (1961) to 26 percent (1978). Herschell found that, while the tax burden has been strongly regressive, the incidence of public expenditures has been strongly progressive (33). In 1974, while the share of low-income groups in total tax payments was 27 percent, their share as beneficiaries of public expenditures was 55 percent. This increased the income of these households, which represented 52 percent of the total number and earned 21 percent of the total income, by another 74 percent.

The share of labor in total factor payments has shown a steady tendency to increase, from 57 percent in 1960 to 65 percent in 1979. This has been associated with the improvements in the shares of income accruing to the households in the middle groups of the distribution and has reflected the growth of public-sector employment, modernization, and the opportunities for upward mobility created by the structural transformation of the economy (28).

Legal minimum wages were first mandated in 1933, and have been separately set for different sectors of economic activity and occupational categories (34). In general, however, during the 1960s and 1970s, actual wage increases were greater than the adjustments in minimum wages, particularly in the manufacturing and public sectors (35). While minimum industrial wages were adjusted by 30 percent between 1964 and 1973, actual wages increased 100 percent, due to mobility towards higher-productivity occupations. Before 1973, the rate of unionization was lower than the rate of open unemployment, and only a small proportion of the labor force was being paid as low as the legal minimum. Wage

policies became more important after 1974, when inflation accelerated, and specific distributive goals were adopted. Since then, adjustment have been inversely related to existing wage levels, in order to narrow earning gaps (28).

During the 1960s and 1970s, on average, wages paid in agriculture had been the lowest. By 1963 they represented 75 percent of the national average and this dropped to 58 percent by 1973, after the adoption of the protectionist strategy of industrialization. During the rest of the decade, however, agricultural wages grew faster (due to the "coffee boom") and by 1981 represented 61 percent of the national average. Wages paid in basic services (electricity, water, transportation) and in other service sectors have been the highest, representing 1.2 times the national average by 1981, while wages paid in manufacturing have been close to the national average. During the 1970s, wages paid by the private sector have represented about 75 percent of the national average and those paid in the public sector about 1.5 times this average (28).

Access to Resources and Land Tenure

Because of its temperate climate and fertile soil, the Central Valley has been the political, economic, and demographic center of the country. San Jose and three of the other most important cities are located there, in addition to numerous towns and villages and a dense rural population (36). The two other important cities are a port on each ocean. The small size of the country and the proximity of these rural areas to the urban

centers has reduced their rural character. Small size and proximity also have facilitated the provision of health-care services. About 56 percent of the country's population lives in the Central Valley, which covers only 15 percent of its territory, while 28 percent of the population is concentrated in San Jose. While average density is 188 inhabitants per square kilometer in the valley, it is only 19 inhabitants outside the valley.

The country possesses few resources beyond its fertile soil, ample water for the production of both food and export crops and for power generation, and its well educated population. There are no important mineral resources and no oil deposits. Until recently, agricultural expansion was facilitated by the availability of uncultivated land. Increases in area cultivated were made possible by the development of the road network (27,750 kilometers), and public-sector services. Nevertheless, the agricultural frontier is now disappearing, and in the future increased output will require productivity increases (37).

Middle-size farms have been important in the overall land distribution (28). Gini coefficients for land distribution were 0.752 in 1950 and 0.758 in 1973. Redistribution has been attempted by the land-reform program created in 1962. In the early stages, landless farmers were settled in virgin lands by the government. Later, title was granted to occupants who had invaded government lands. In the early 1970s, cooperatives were created and land owned collectively. Finally, the program has dealt with integrated rural development in particular areas. Both public and

private farms have been purchased and distributed. By 1975, about 2,130 households had benefited from these programs, at great expense. This number had increased to 7,690 households by 1980.

Concluding Remarks

Health improvements in Costa Rica have been remarkable and sustained, resulting in substantial gains in life expectancy. Numerous factors have contributed to this achievement, complementing and reinforcing one another. This paper describes the nature of some of these determinants of success. Not all of them have been considered (even within the category of socioeconomic factors) and no effort has been made to measure their relative importance (14). Although some causal relationships have been suggested, none has been tested, formalized, or established. All of the data have been obtained from other sources and suffer (to a much lesser extent for the case of Costa Rica) from the deficiencies typical of information in LDCs.

It is clear that the extent of the achievements has reflected the complementarity of the multiple determinants: actual gains have been greater than the sum of expected results from isolated interventions. The technology for social progress thus shows substantial "economies of scope". Moreover, the "Costa Rican experience" has not been a recent phenomenon; even recent gains have resulted from a long gestation period and a sequence of preparatory accomplishments. Sustained efforts over a long period of time, a unique "social contract" that emphasizes

equity, and a successful mix of health and non-health policies and programs explain the wide range of the gains.

The country's exceptional political system and homogeneous social structure have played a crucial role, directly and indirectly. This socio-political background explains the emphasis in education and Costa Rica's more rapid long-term economic growth. Endowed with similar resources and of equivalent size, Costa Rica started from a disadvantaged economic position, in comparison to other Central American countries, at the time of independence (1821). By 1950, income per capita was twice that of its neighbors, while wealth was more evenly distributed. Social indicators showed an even greater gap. The absence of a military establishment has prevented the concentration of power and has released substantial resources for education and health. The concern for equity has reflected the country's democratic traditions and has influenced socioeconomic policies. Freedom and an open society have generated strong demands for social services and have facilitated universal access to them.

Public investment in infrastructure, human-capital formation, and basic services responded to these political demands and were made possible by rapid economic growth. The country's small size and the concentration of activity in the Central Valley have reduced their costs, financed with important contributions of foreign assistance. Water, sewage disposal, electricity, telephones, roads, newspapers, radio and television have reached all corners of the country, accompanying clinics and health centers. Successful technologies in primary health care (immunization, sanitation,

preventive medicine, etc.) have been adopted, while their effectiveness has been increased by education and increasing incomes to pay for their opportunity costs. Substantial allocations of human and material resources have been channeled according to aggressive, flexible, and innovative policies. The country has also operated one of the most comprehensive social security systems among LDCs. Access to health care has been improved through the expansion of the physical infrastructure, education, and universal coverage with social security.

Costa Rica's priority concern with education over many decades has been another major factor. Schooling and low illiteracy have increased receptiveness to new ideas and the ability to implement them. Equal educational opportunities for both men and women (mothers) and the absence of significant urban-rural differentials in educational achievements have contributed to more uniform health gains. Poor-non-poor differentials in education have been negligible (32). Education has contributed to the multiplier effects of the explosion in communications, to the decline in fertility, and to increased labor productivity.

Economic growth has provided the resources required to justify the political demands and to raise living standards. During 1950-80, Costa Rica experienced rapid growth, fueled by exports of primary products and, during a shorter period of time, by import-substitution industrialization within the CACM. A small domestic market has forced the country to rely on foreign trade as the engine of growth. The resulting openness of the economy,

in turn, has made it vulnerable to external shocks. As a consequence, growth has been uneven. Development strategies and external factors have induced substantial structural transformations. The relative importance of agriculture in output and employment has declined, while that of the public sector has increased.

Structural deficiencies, a contradiction between the country's development strategy and some of its economic characteristics, and unfortunate external shocks and domestic policies resulted in the economic crisis of the early 1980s. Output stagnated, unemployment increased, and inflation and devaluation brought about major wealth redistributions. Public-sector incursions into productive activities have jeopardized its ability to provide the social services Costa Ricans have become used to. Foreign borrowing, in order to postpone the adjustment, has compromised future growth, and debt service competes with basic services in the allocation of funds. The burden of a hypergrown public sector has been at the roots of the financial crisis and raises questions about how far can poor-country governments attempt to do too much. There is not enough information available about the impact of the crisis on health gains (apparently minor, so far), but many questions have been raised about the country's ability to maintain its rhythm of social progress in the near future, in the face of a massive external debt and reduced economic growth.

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Table 1. Costa Rica: Demographic and Labor Force Indicators, 1950-1983.

	1950	1963	1973	1976	1980	1983
Population ('000)	858	1,380	1,872	2,018	2,245	2,433
Density (Km ²)	17	27	37	40	44	48
Urban population (%)	33.5	34.5	40.6	43.8	46.3	48.0
Median age (years)	18.2	16.4	18.0	-	19.7	-
Population 12 years old and older (%)	63.3	59.6	64.6	66.7	68.8	69.6
Birth rates	4.7	4.5	3.0	3.0	-	-
Annual growth rates: (%)						
Population	3.3	3.7	3.1	2.5	2.8	2.7
Population 12 years old and older	-	3.2	3.9	3.6	3.4	3.0
Labor force	-	2.8	3.7	4.1	2.0	0.8
Employment	-	2.5	3.6	4.4	0.9	1.2
Urban labor force (%)	36.2	37.0	43.4	46.1	48.3	49.6
Labor force participation rates: (%)						
Male (%)	90.3	83.7	78.4	77.3	75.9	75.8
Female (%)	16.0	16.0	18.6	22.1	24.4	25.2
Labor force ('000)	287	408	585	659	768	849
Labor force as a proportion of the total popul.	33.4	29.6	31.3	32.7	34.2	34.9
Fertility rates	6.7	7.0	4.1	3.7	-	-
Population in the Central Valley (%)	55.8	55.7	56.8	-	57.5	-
Population in the Metropolitan Area (%)	23.9	25.7	26.5	-	27.5	-
Open unemployment (%)	-	6.9	7.3	6.2	5.9	9.0

- means not available.

Sources: References (1), (27), (28).

Table 2. Costa Rica: Employment Indicators, 1950-1983.

	1950	1963	1973	1976	1980	1983
Total employment ('000)	275	380	542	617	723	772
Total unemployment ('000)	12	28	43	42	45	77
Shares in employment: (%)						
Private sector	93.9	86.7	84.7	83.2	80.3	82.1
Public sector	6.1	13.3	15.3	16.8	19.7	18.9
Average annual rates of growth for the period:						
Total employment	2.5	3.6	4.4	4.0	2.2	
Private sector	1.9	3.4	3.8	3.1	2.5	
Public sector	8.8	5.1	7.7	8.2	0.9	
Shares in employment: (%)						
Agriculture	54.7	49.7	38.2	34.8	27.4	28.3
Manufacturing	11.3	11.7	12.9	14.6	16.3	16.4
Construction	4.3	5.5	6.9	6.5	7.8	5.2
Basic Services	4.0	4.8	5.5	5.6	6.6	-
Commerce	7.9	9.9	14.7	16.3	18.1	-
Personal Services	17.8	18.4	21.8	22.2	23.8	-
Average real wages (Index):						
Total	-	-	106	100	119	99
Private sector	-	-	107	100	121	107
Public sector	-	-	106	100	110	90
Workers' remunerations as a proportion of factor payments	-	57.2	60.8	61.0	65.4 ^a	-
Workers' remunerations as a proportion of national income	-	56.2	58.7	58.8	64.1	-

a/ As of 1979.

- means not available.

Sources: References (21), (22), (23), (26), (27), (28).

Table 3. Costa Rica: International Trade and Financial Indicators, 1950-1983.

Indicators	1950	1955	1960	1965	1970	1975	1980	1983
Exports as a proportion of the GDP (current prices)	27.6	25.0	21.4	22.8	28.2	30.4	27.3	-
Exports as a proportion of the GDP (constant prices)	22.9	16.1	21.4	21.8	34.2	36.4	35.6	38.9
Imports as a proportion of the GDP (current prices)	23.4	26.0	26.2	33.3	35.0	38.7	38.2	-
Imports as a proportion of the GDP (constant prices)	28.9	27.2	24.9	30.9	39.6	34.4	41.7	24.1
Coffee as a proportion of total exports	32.9	46.1	53.9	41.6	31.6	19.6	24.8	26.5
Bananas as a proportion of total exports	58.2	41.0	24.0	25.3	28.9	29.2	22.3	26.9
Export price index (1966:100)	98.4	124.2	96.2	100.5	86.7	145.2	231.6	214.2
Import price index (1966:100)	78.8	104.1	95.1	99.3	99.4	182.7	252.1	308.2
International terms-of-trade	124.9	119.3	101.1	101.3	87.2	79.4	91.9	69.5
Exports (million US\$)	54.1	81.0	84.3	111.8	231.2	493.3	1,008.1	868.9
Imports (million US\$)	45.7	87.0	110.4	178.2	316.7	694.0	1,524.0	988.0
Current account (million US\$)	0.7	- 6.8	- 18.9	- 67.2	- 74.0	- 217.7	- 663.9	- 358.7
Capital inflows (million US\$)	- 1.7	10.7	16.2	69.0	58.0	238.6	460.2	744.0
Wholesale price index (66:100)	102.9	95.9	97.6	99.2	125.3	279.7	521.3	2,562.0
Domestic terms-of-trade of agriculture (1966:100)	-	123.7 ^a	103.3	102.5	93.4	95.8	97.3	-

- means not available. a/ 1957. Sources: References (21), (22), (23), (26), (27), (28).

Table 4. Costa Rica: Output and Structural Transformation Indicators, 1950-83.

	1950	1955	1960	1965	1970	1975	1980	1983
Structural composition of the GDP (Current prices)								
Agriculture	40.9	38.3	26.0	23.5	22.5	20.3	17.8	23.3
Manufacturing	13.4	13.3	14.2	16.8	18.3	20.4	18.6	19.9
Commerce	19.1	19.5	21.0	20.2	21.0	19.1	20.1	-
Construction	-	4.4 ^a	4.3	4.7	4.3	5.2	6.2	-
General Government	5.4	7.7	9.0	9.7	10.6	12.4	15.2	-
Other	-	16.8	25.5	25.1	23.3	22.6	22.1	-
Structural composition of the GDP (Constant prices)								
Agriculture	-	24.4 ^a	25.2	22.9	24.1	21.2	18.0	21.0
Manufacturing	-	14.1 ^a	13.8	16.7	18.6	21.2	22.0	20.4
Commerce	-	20.7 ^a	20.4	20.2	19.9	17.2	18.4	14.8
Construction	-	4.6 ^a	4.5	4.7	4.1	5.2	5.7	3.5
General Government	-	12.1 ^a	11.3	10.8	9.9	10.3	10.0	11.1
Other	-	24.1	24.8	24.7	23.4	24.9	25.9	29.2
GDP in 1966 prices (million colones)	1,563	2,332	3,113	4,009	5,574	7,473	9,648	8,639

- means not available

a/ 1957 Sources: References (21), (26), (28).

Table 5. Costa Rica: Education and Social Indicators, 1950-

	1950	1963	1973
Illiteracy rates:			
Total population 10 years and older	21.2	14.3	10.2
Male	20.9	14.1	10.2
Female	21.6	14.5	10.3
Urban	8.1	5.2	4.4
Rural	28.5	19.7	14.7
Urban male	6.5	4.0	3.7
Urban female	9.4	6.2	5.1
Rural male	27.8	19.2	14.6
Rural female	29.2	20.1	14.8
Population 15 years and older with primary education completed (%)			
	-	17.2	28.8
Urban	-	25.9	29.9
Rural	-	11.8	27.9
Male	-	16.9	28.8
Female	-	17.4	28.7
Women 15-59 years old in school (%)	7.9	19.9	36.4
Women 20-24 years old in school (%)	1.5	5.2	14.9
Life expectancy (years)	55.7	62.4	68.2
Social security coverage of labor force (%)	23.0	29.0	50.0
Social security coverage of total population (%)	12.0	22.0	60.0

- means not available

Source: Reference (20).

100